

Claim 8 has been amended to correct a spelling error in response to the Examiner's objection. In view thereof, withdrawal of the objection is respectfully requested. A similar typographical error has been corrected in claim 15.

Applicant gratefully acknowledges the indication of the allowability of claims 18 and 19.

Claims 1-3, 8, 9 13 and 14 have been rejected under 35 USC 102(b) as being anticipated by Hoyt et al. (US 3,942,270). Applicant respectfully disagrees and in view thereof respectfully requests withdrawal of the rejection.

The Examiner states "[a]s to claim 1, Hoyt discloses in Figures 1-7 an eye shade apparatus having variable transmission." Applicant respectfully disagrees.

Hoyt et al. teaches in the abstract:

A means of simulating loss of peripheral vision and the eventual total black-out experienced by a pilot, undergoing high acceleration forces while maneuvering an aircraft is disclosed. The simulation is achieved by modifying the pilot's helmet by incorporating thereon a variable optical device which when excited causes a reduction of pilot vision. The reduction in vision is progressive, in direct proportion to the level of excitation applied, which excitation itself is directly proportional to the acceleration forces simulated.

The variable optical device referred to in Hoyt et al. as summarized in the abstract thereof is not an eye shade device or apparatus, but is "[a] means of simulating loss of peripheral vision." Hoyt et al. is not intended to shade the eyes, but is intended to simulate the loss of peripheral vision. Hoyt et al., therefore, teaches preventing a pilot in a flight simulation machine from primarily seeing to the side (to the right and left) when looking forward. Thus Hoyt et al. is directed to simulating "tunnel vision" and not "An eye shade apparatus having a variable transmittivity" as claimed by applicants. In this regard the second paragraph of the Hoyt et al. "Summary or Invention" teaches:

In flight under high-g acceleration stresses a pilot may black-out and then lose consciousness. Part of the physiological process of blacking-out is to experience tunnel vision. An experienced pilot learns to judge how close he is to black-out by the extent of his peripheral vision loss. (Emphasis added)

Hoyt et al. further teaches at Col. 3, lines 45-49:

the present teachings may be applied so as to modify a visor of a pilot's flight helmet so that the wearer of that visor can be made to experience the simulated effect of the onset of progressive tunnel vision. (Emphasis added)

It is, therefore, clear that of Hoyt et al. does not teach an apparatus having "nonuniform light transmission" as claimed by applicant. On the contrary Hoyt et al. teaches "regular" optical transmission to simulate "tunnel vision." For example, in regards to the embodiment of Hoyt et al. Fig. 2, which is directed to a "visor showing a thickness gradient" (Col. 2, lines 18-19) Hoyt et al. teaches at Col. 3, lines 19-27:

As the level of excitation is increased, the change in the optical transmission characteristic of the VOM occurs first in the thicker portion of the VOM layer. This change, say from transparent-clear to diffuse-white, moves in a regular, progressive manner from the thicker to the thinner portions of the layer as the level of excitation is further increased.
(Emphasis added)

As shown in Fig. 2 of Hoyt et al. the visor is thicker at the outer edges than at the center. Moreover, Hoyt et al. teaches at Col. 3, lines 61-64 that "[t]he gap varies from approximately 1/2 mil at the central portion of the modified visor assembly to approximately 5 mils at the peripheral edges." As a result of this variation in thickness Hoyt et al. teaches at Col. 3 line 64 to Col. 4, line 6 that:

When a voltage is applied from source of excitation 4 the transparent-clear liquid becomes diffuse-white first at the edges of the visor. As the excitation is increased, the area of diffusion grows progressively from the edges of the visor toward the central portion. The effect upon a pilot wearing this visor is that his peripheral vision is reduced in a regular, progressive manner as the excitation of the variable optical medium is increased. (Emphasis added)

Thus Hoyt et al. does not teach "nonuniform light transmission" as claimed by applicant.

Moreover, for example, in regards to the embodiment of Hoyt et al. Fig. 5 Hoyt et al. teaches at Col. 4, lines 44-58 to Col. 5, line 4:

FIG. 5 illustrates one method of obtaining a voltage gradient across the VOM. ... This conducting surface is then selectively removed... to provide several independent electrodes: for example 2c through 2i inclusive.... Each of the electrodes is connected through selection matrix 11 to source of excitation 4. The selection matrix 11 is connected to matrix controller 12 by which means the sequence in which each electrode 2c-2i is energized is selected. ... By sequentially applying a voltage first to electrode 2c then to each electrode in turn until electrode 2i is energized the change in the optical characteristic of the liquid crystal will be progressive from top to bottom of the figure illustrated. By energizing electrodes 2c and 2i simultaneously, and then in sequence energizing electrode pairs 2d and 2h, 2e and 2g, then finally electrode 2f, the change in the crystal characteristics will proceed simultaneously from both top and bottom edges toward the center of the figure illustrated. As may be readily seen this technique lends itself directly to the modification of a pilot's flight helmet visor as before mentioned. (Emphasis added)

That is Hoyt et al. in regards to Fig. 5 teaches as states at Col. 4, lines 3-6, of Hoyt et al. that:

The effect upon a pilot wearing this visor is that his peripheral vision is reduced in a regular, progressive manner as the excitation of the variable optical medium is increased. (Emphasis added)

Thus Hoyt et al. does not teach "nonuniform light transmission" as claimed by applicant.

In contradistinction, applicants teach in the second full paragraph of page 8 of the specification:

Fig. 8 schematically shows exemplary plots 140, 142, 144, 146 and 148 of transmittivity verses the distance from the top to the bottom of the electro-optic shutter 14 as shown in Fig. 6. The plots can have any shape. (Emphasis added.)

This refers to the embodiment of applicant's Fig. 6, which has stripes of conductive material across the surface of the eye shade device, which is described at page 7, lines 7-9, from the bottom of applicant's specification.

Applicant's Fig. 8 is clearly not limited to a "regular" pattern of transmittivity, but shows a "nonuniform light transmittivity." For example each of the plots 142, 144, 146 and 148 of Fig. 8 is not systemic. There is no requirement in applicant's teaching of the "regularity" required in the teaching of Hoyt et al. to simulate "tunnel vision". Moreover, applicant teaches at page 8, lines 6-11, of the specification in regards to Fig. 9:

Rather than having conductive stripes 32' spanning across the transparent substrate 26 as in Fig. 6, transparent substrate 26' of Fig. 9 has a plurality of preferable transparent electrically conductive regions 160 with preferably transparent electrically conductive lines 162 to provide an electrical connection from conductive regions 160 to edge 166 of transparent substrate 26'. A different amount of power, for example a voltage or current can be applied to each region 160 so that the transparency in each region can be different.

Applicant shows in Fig. 9 a two dimensional matrix of electrodes each of which can have a different voltage applied thereto and thus a different transmittivity, thereby having an arbitrary pattern of transmittivity across the substrate 26. Thus Hoyt et al. cannot have "nonuniform light transmittivity" as claimed by applicant.

Claims 4-7, 10-12, 16, 17 and 20 have been rejected under 35 USC 103(a) as being unpatentable over Hoyt et al. as applied to claims 1 and 8 in view of Grupp, US 5,608,567. Applicant respectfully disagrees and respectfully requests withdrawal of this rejection. For the reasons given above Hoyt et al. provides no teaching or suggestion for "nonuniform light transmittivity" as claimed by applicant. Grupp does not provide any teaching, suggestion, motivation for or incentive for "nonuniform light transmittivity" as claimed by applicant.

Claim 15 has been rejected under 35 USC 103(a) as being unpatentable over Hoyt et al. in view of Grupp as applied to claims 1 and 17 and further in view of Witt, US 4,106,217. Applicant respectfully disagrees and respectfully requests withdrawal of this rejection. For the reasons given above Hoyt et al. and Grupp alone or in combination

provides no teaching or suggestion for "nonuniform light transmittivity" as claimed by applicant. Witt does not provide any teaching, suggestion, motivation for or incentive for "nonuniform light transmittivity" as claimed by applicant.

In view of the changes to the claims and the remarks herein, the Examiner is respectfully requested to reconsider the above-identified application. If the Examiner wishes to discuss the application further, or if additional information would be required, the undersigned will cooperate fully to assist in the prosecution of this application.

Respectfully submitted,



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APPENDIX

The amended claims in rewritten form and added claims are below.

8. (Rewritten) An eye shade apparatus according to claim 1 wherein said electro-optic lens comprises a plurality of regions, said variable power source comprises a plurality of power outputs, each of said plurality of power outputs corresponds to at least one of said plurality of regions.

15. (Rewritten) An eye shade apparatus according to claim 1 wherein said apparatus comprises a first and a second lens adapted for shading a first and second eye of a user and a first and second side lens.